

# Parameter Passing

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# Parameter Passing in Java

- Passing by Value is what you have seen so far
  - A copy of the argument value is passed to the method
  - Within the method, any changes to the argument are only local - they do not affect the original value when the method returns

```
void foo(int n) {  
    n += 5  
}
```

// In the caller function

```
int m = 10;  
foo(m);  
// m is still 10
```

# Passing by Reference

- Sometimes you want to change the parameter
  - Supported in C/C++ by prefixing & before a parameter, not in Java
  - C++ code example:

```
// C++ Code, not valid Java
```

```
void foo(int &n) {  
    n += 5  
}
```

```
// In the caller function
```

```
int m = 10;  
foo(m);  
// m is now 15
```

# Simulating Passing by Reference in Java

- Store the value in an object (e.g., array) and then pass the object reference
- Somewhat complicated, but doable.

// Java code

```
void foo(int []n) {  
    n[0] += 5  
}
```

// In the caller function

```
int m = 10;  
int[] mcontainer = new int[1];  
mcontainer[0] = m;  
foo(mcontainer);  
m = mcontainer[0];
```